

**Galena Technical Project
Summary Comments
Meeting #4
August 26-27, 2003**

The Galena Technical Project Team (TPT) convened its third meeting in Galena, August 26, 2003. The meeting was held at the Loudon Tribal Council.

In Attendance:

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| Ann Farris | Department of Environmental Conservation (DEC) |
| JoAnn Grady | Facilitator |
| Ragine Attla | Louden Tribe |
| Eleanor Yatlin | Louden Tribe |
| Phil Koontz | Louden Tribe |
| Marvin Yoder | City of Galena -Excused absence |
| Steve Wicks | Galena Schools |
| Dave Hertzog | Air Force-611 th Command |
| Bill DiGuseppi | EarthTech-Air Force Contractor |
| Krista Graham | Oasis Environmental-Air Force Contractor (by phone on Day 2) |

Summary Comments/Decisions

- The TPT received a briefing from Dave Hertzog, Bill Di Guseppi, Ann Farris and Phil Koontz on the meeting held in San Antonio to discuss the Soil Vapor Extraction (SVE) system in Galena at the Petroleum, Oil and Lubricants (POL) (ST005). Phil Koontz provided the following summary of the discussion and outcome of the San Antonio meeting.

As part of the planning for the Remedial Investigation/Feasibility Study work plan, a two day meeting was held at the Earth Tech office in San Antonio, Texas on August 11 and 12, 2003 to consider options for a Treatability Testing Work Plan that will be implemented at the POL and GAVTC (Galena Aviation Vocational Technical Center) sites at the Galena, Alaska Airport Facility. The meeting was attended by the following people-

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| David Hertzog | USAF Remedial Project Manager |
| David Cook | Headquarters PACAF |
| Ron Porter | Mitretek |
| Patrick Haas | Mitretek |
| Bill DiGuseppi | Earth Tech |

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| Manish Joshi | Earth Tech |
| Mike Niederreither | Earth Tech |
| Collen Brownlow | Earth Tech |
| Cody Black | Oasis Environmental |
| Phil Koontz | Yukaana Development. |

The purpose of the meeting was to prepare a draft proposal for testing soil cleanup techniques at the POL and GAVTC facilities. This element of the RI/FS study was chosen for special consideration because critical information is still lacking that must be developed this winter, and preparations have to be made for the testing during the 2003 summer barge season and construction season.

Previous testing and cleanup efforts indicate that SVE methods can remove substantial amounts of fuel vapors from the unsaturated soil zones, particularly in the winter when water tables are at a seasonal low level, and that in-situ bioventing by air injection may be a reasonable alternative treatment method where it can be implemented.

However, the previous work has demonstrated that off gas treatment systems are unreliable and difficult to maintain, particularly during the winter in this part of Alaska.

Additional information is also needed about respiration rates in the proposed bioventing area to complete an adequate design for the RI/FS, and there is a great deal of concern about fuel emissions to the air and degradation of the air quality in the GAVTC building and the surrounding community.

The evaluation team reviewed the previous cleanup efforts and decided to focus on two remedial options for the unsaturated soil zone.

1) In-situ bioventing by air injection will be tested on the north side of the road, in the vicinity of the former POL tank farm and building 1820. As part of the biovent respiration tests, information will be developed that may be used for an air reinjection system that may be developed to treat contaminated air emissions from the SVE projects on the south side of the road. The biovent testing will evaluate the number of wells and the air injection requirements for the system.

2) SVE will be tested on the south side of the road where air injection for bioventing might pose a breathing air hazard to occupants of the buildings in the area, including the JBX office, the GAVTC building, Larry's Flying Service, Warbelows Air Ventures, and the Frontier Flying Service Office. The SVE testing generates similar information (flow rates, radius of influence, etc.) but the SVE system test is also aimed at protecting the indoor air quality of the GAVTC building by improving vapor removal under the building, and by ensuring that off

gas emissions will not pose a health threat to people either in the building or at outdoor locations nearby.

When it became clear that SVE would be part of the testing, it was also clear that discharging the soil vapors could cause an air quality problem due to the large quantities of hydrocarbon fuel vapors that would likely be extracted from the SVE wells. Most of the first day of the meeting was devoted to considering all of the options for handling the vapors to prevent health and safety problems, and to comply with the laws and regulations for discharge of the vapors.

There are several treatment technologies available to remove the hydrocarbons from the air. The options that were considered included:

- Absorption using activated carbon.

- Oxidation: burning the fuel vapors using either a specially designed oxidizer unit that can operate using propane or diesel as a supplemental fuel, or an internal combustion engine that burns the fuel vapors as part of its fuel supply.

- Re-injection into the soil with supplemental air to provide enough oxygen to promote biological degradation of the contaminants.

The absorption option was not considered practical, because the carbon system would be prohibitively large and logistics of supplying enough carbon to Galena made this option impractical.

Oxidation was found to be technically feasible, and several variations were discussed, as well as estimates for costs of the equipment, freight, supplemental fuel, electrical power and piping installations. Past experience has indicated that the high fuel value of the vapors may cause problems with operating the equipment, in addition to the normal issues of winter in Galena, including problems with propane or diesel that do not burn reliably in cold weather, freezing of pipelines and equipment that handle moist air during the winter, and difficulty with providing adequate maintenance of complicated equipment. The principal problem with oxidizer equipment was therefore considered to be lack of reliability and potential down time.

Re-injection was the preferred treatment alternative for the contaminated soil vapors. For purposes of this treatability study, however, there is not enough information about the concentration and volume of the contaminated air that will need to be treated or about the biological activity of the soil to provide the treatment zone to develop an adequate design for the re-injection system. There was also some concern about

reliability of a re-injection system that would depend on a pipeline crossing of the road that might be subject to freezing or other operational problems that could interrupt the SVE operation. After some discussion, the group decided that reliability of the SVE/depressurization system at the GAVTC building is an important enough issue to justify consideration of discharging the SVE vapors without treatment.

The second day of the meeting was devoted to developing a plan for testing the SVE and bioventing systems while providing adequate safeguards for health and safety of the occupants of the buildings in the area, of the ambient air quality at the base and the community, and assurance that the air discharge permits for the base will not be violated by the testing and operation. As the plan developed, it was decided to incorporate the SVE blowers in the vicinity of the GAVTC building into the existing sub-surface depressurization system, to provide additional vapor control and venting for the building.

The Technical Memorandum for South POL (ST005)/GAVTC (CB001) Pilot Testing, Galena Airport, Alaska is the result of the deliberations of the meeting. This memo was issued as a draft, and reviewed by DEC. AF/EarthTech/MitreTek are preparing responses to comments which will be issued in September.

- Dave Hertzog and Bill Di Guiseppi of Earth Tech presented a list of the Remedial Investigation and Feasability Study (RI/FS) documents due for review by the TPT. The work plan will be out for review on September 8th and all comments on the document are due back to the AF by September 26th. Comment resolution will take place in “real time” at the TPT meeting scheduled for October 2-3, in Anchorage. Documents to be reviewed include the following:
 - Technical Memorandum: The “tech memo” for the POL site and the GAVTC outlines the subsurface treatability of the POL and GAVTC sites. The document was drafted in San Antonio, revised to include written responses, and has been resubmitted for review. It is now in the final draft stage. It is expected to be finalized the second week of September.
 - GAVTC Sampling and Analysis Plan (SAP): This plan reviews the indoor air sampling plan for the GAVTC building. It was pulled out of the work plan in order to expedite its early review. It is scheduled to be finalized within two to three weeks. Steve Wicks will provide data to the AF and the DEC regarding the number of children and teachers working in the GAVTC building this year and their estimated length of time within the building. This “feeder” exposure document will be used to finalize the SAP.
 - Work Plans: The RI/FS work plan will provide a brief introduction reviewing the purpose of the remedial investigation. It includes detailed summaries of all of the sites to date and outlines activities to be performed

at each site. It contains sections on how data, risk and remedial technologies will be evaluated. The work plan also includes data quality objectives (DQOs) which list each piece of data to be collected, where it will be collected, and what possible outcomes are expected from the data. The following documents for TPT review are included in the work plan

- Field Sampling Plan (FSP) This document details how sampling is to be conducted. The Air Force Center for Environmental Excellence (AFCEE), EPA and State guidelines for sampling will be used.
- Quality Assurance Program Plan (QAPP) This document details the quality assurance procedures that will be completed in order to obtain defensible, high quality data.
- Treatability Study Work plan (TSWP) This document reviews all available information on a site in order to make sure that the best decision is made on selecting technology remedies.
- Health and Safety Plan (HASP) This plan details procedures put in place to keep employees safe.
- The Community Relations Plan (CRP) detailing how the community will be kept informed of work being conducted and its outcome. **
- The Management Action Plan (MAP) which is a facility planning document that outlines how the environmental programs will be implemented at the Galena Airport. **

** Note that the CRP and MAP will not be submitted as part of the Draft Work Plans.

- Bill DiGuseppi of Earth Tech led a discussion summarizing the proposed field activities for each site at Galena and Campion. The following table includes the revisions made by the TPT to the document and will be included in the RI/FS work plan. Approval to complete these activities will be granted through approval of the RI/FS work plan.

| Site | ACTIVITY | NUMBER |
|--|--|--------------------|
| Fire Protection Training Area (FT001) | 3 rounds of Groundwater Sampling | 4 wells |
| | Soil Sampling (0-0.5', 1-5', 12-14') | 5 locations |
| POL Fuel Line Leak – 20,000 to 30,000 gallon (ST003) | DPT Groundwater Samples | 2 locations |
| POL Tank Farm - Saddle Tanks (ST005) | 3 rounds of Groundwater Sampling | 12 wells |
| | DPT Groundwater Samples | 2 locations |
| | LNAPL Sampling | 1 well |
| | Monthly Product Thickness Measurements | 15 wells |
| | Monthly Bail Down Tests | Up to 15 wells (a) |
| | SVE Pass/Fail Tests | 6 SVE wells |
| | 30 day SVE Test | 6 SVE wells |
| Birchwood Hangar (AOC1) | Bioventing Respiration Tests | 7 VMP wells |
| | Soil Sampling (1-2') | 5 locations |

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| | Soil Sampling (8-10') | 5 locations |
| | Concrete Wipe Samples | 4 locations |
| Galena Aviation Technology Center - GAVTC (CB001) | SVE Pass/Fail Tests | 4 SVE wells |
| | 30 day SVE Test | 4 SVE wells |
| Million Gallon Hill (CG001), (formerly ST009) | 3 rounds of Groundwater Sampling | 21 wells |
| | LNAPL Sampling | 1 well |
| | Monthly Product Thickness Measurements | 23 wells |
| | Monthly Bail Down Tests | Up to 23 wells (a) |
| | Bioventing Respiration Test | 1 well |
| Missile Storage Area (CG002) (formerly SE MGH bioventing area) | 3 rounds of Groundwater Sampling | (Wells included in MGH count) |
| Wilderness Hall - Building 1872 (SS005) | Groundwater Sampling (3 rounds) | 4 wells (c) |
| | DPT Groundwater Sampling | 3 locations |
| | Soil Sampling (0-0.5', 5-7') | 5 locations |
| | Monthly SVE Vapor samples from SVE well | 1 well |
| Contaminated Sediment - DDT Soils (CS001) | Soil Sampling (8-10') | 5 locations |
| | Soil Sampling (total depth) | 5 locations |
| Building 1845 - TCE Area (SS006) | 3 rounds of Groundwater Sampling | 10 wells |
| Power Plant Tank #49 (TU001) | 3 rounds of Groundwater Sampling | 1 well |
| | Soil Sampling (0-0.5', 8-10') | 5 locations |
| South East Runway Fuel Spill (ST010) | 3 rounds of Groundwater Sampling | 8 wells |
| | Soil Sampling (0-0.5', 5-7') | 10 locations |
| Control Tower Drum Storage Area (SS002) | Soil Sampling (0-0.5', 5-7') | 10 locations |
| | DPT Groundwater Samples | 2 locations |
| JP-4 Fill Stands (ST009) | 3 rounds of Groundwater Sampling | 8 wells |
| | Soil Sampling (5-7') | 5 locations |
| | Soil Sampling (13-15') | 5 locations |
| Campion POL Storage (ST007) (Site and Stockpiled Soil) | 3 rounds of Groundwater Sampling | 5 wells |
| | Soil Sampling (0-0.5', 8-10') | 10 locations |
| | Monthly Product Thickness Measurements | 2 wells |
| | Monthly Bail Down Tests | 2 wells (a) |
| Water Supply System | Monthly stripper influent and effluent sampling | 2 locations |
| Background Locations | 3 rounds of Groundwater Sampling | 5 wells |
| | Soil Sampling (0-0.5' 5-7') | 12 locations |
| Basewide (Galena and Campion) | Depth to water measurements (3 rounds) | 85 wells |
| | Continuous water level measurements | 15 wells (2 at Campion) |
| | Land Surveying | 40 wells |

Table Notes:

- (a) Product recovery testing will be performed on all wells that show at least six inches of measurable product.
- (b) Wells VMP2 and VMP5 were not considered viable or necessary for monitoring initially. Depending on site conditions and results of early sampling events, these 2 VMPs may be added to the monitoring program.
- (c) Wells sampled once for VOCs only.

- On the second day of the TPT meeting, Krista Graham of Oasis Environmental joined the TPT team via telephone and participated in the TPT's Conceptual Site Model (CSM) discussion. Krista will travel to Galena the week of October 20th

and work with Eleanor Yatlin of the Loudon Tribal Council to conduct personal one-on-one interviews with residents. Eleanor Yatlin will ask the host of the “Athabaskan Hour” radio show about the possibility of using the show, or other time slots, to notify local residents about the interviews.

The TPT provided several suggestions to the AF regarding the best ways to conduct interviews in Galena in order to develop a pertinent model. Suggestions for gathering information include:

- Announcing the intent and specifics of the interviews in the Loudon Tribal newsletter.
 - Telephoning known subsistence users and personally inviting them to an interview.
 - Producing a Public Service Announcement (PSA) to be played on the Galena radio station. Oasis will develop the PSA and send it to Loudon
 - Developing a guide for the interviewer explaining the type and purpose of information that is required for the CSM.
 - Producing maps of the Galena and Campion areas to assist interviewers in marking sites used for subsistence gathering and hunting so that areas of land use and what is being used, can be identified and quantified.
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- The next TPT meeting will be held October 2-3, 2003 in Anchorage at the Department of Environmental Conservation (DEC) offices, located at 555 Cordova Street.